JUNE, MDCCCLIII.

# THE ZOOLOGIST:

A

POPULAR MONTHLY MAGAZINE

OF

NATURAL HISTORY

AND

JOURNAL FOR RECORDING FACTS & ANECDOTES

RELATING TO

QUADRUPEDS, BIRDS, REPTILES, FISHES, ANNELIDES,
INSECTS, WORMS, ZOOPHYTES, &c.

THEIR HABITS, FOOD, RETREATS, OCCASIONAL APPEARANCE,
MIGRATIONS, NESTS AND YOUNG.

No. CXXVIII.

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glossy black, and shining like a rook's; it had a white bar on the wings, and, apparently, a broad ring of white round the neck: the others were supposed to be females, from their duller plumage. The birds were very shy, and were carefully followed for six miles before it was possible to get a shot at them; and on doing so, the two remaining birds immediately took flight, rising very high in the air, and were soon completely out of sight: and although the river was carefully watched for several days, no trace of them could again be found.

Dr. Smith also exhibited a specimen of the red-headed pochard (*Anas ferina*), which is not a very common bird in Scotland, occurring generally during severe storms. It measured nearly 30 inches from tip to tip of the wings; whereas, in Macgillivray's Birds, it is described as only 25½ inches. It was shot on the Forth, near Stirling.

A fine specimen of the gray plover (*Squatarola cinerea*), shot near Dunbar in the beginning of February, and two specimens of the greenshank (*Totanus glottis*), shot in the same neighbourhood about the beginning of February, were also exhibited, neither of them being a common bird in the district.

And, lastly, Dr. Smith called the attention of the meeting to a specimen of the common curlew (*Numenius arquata*), which by some accident had lost nearly the half of its upper mandible. The point had, however, become quite rounded, so that the poor bird had contrived to pick up a rather difficult subsistence, even under such unpropitious circumstances.

## *Proceedings of Natural-History Collectors in Foreign Countries.*

Mr. H. W. Bates.*—"Santarem, November 22, 1852.—I now forward the results of my Tapajos voyage, consisting of three boxes of insects, a case of medicinal and economic Botany, a barrel of fishes and reptiles in spirits, a few birds, eggs, nests, shells, mammals, &c., the present being the only opportunity of sending them to Pará since I arrived. The vessel they go by is heavily laden, and I feel rather nervous about the safety of the many precious things I commit to it; but there is no remedy, as there will be no other opportunity so good till January. I wrote to you soon after my return, saying how unwell I was at the time; I am sorry to say I have been still worse, and have suffered severely from the fatigue of the voyage and the unhealthiness of the Tapajos, (nearly all the branch rivers here are pestilential); but still I have had no acute disease, merely bilious attacks, head-aches, prostration of strength, &c. Medicine only made me worse; so I put myself on a rigid diet, took gentle exercise, avoided close application and exposure to the sun. For these reasons I have been unable to send you many notes on the collection sent — only copying my note-

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* Communicated by Mr. S. Stevens.

BRITISH MUSEUM 2 A

book on the specimens of economic and medicinal Botany. I should have liked to send my notes on the fishes, but it would have been necessary to copy my rough pen and ink outlines of the species—the only means, of course, of recognizing them; but my ill health quite disabled me from all close application. There must be, I am sure, some rare and curious fishes amongst them, as they were chiefly taken in remote creeks in the depths of the forest. There is a Syngnathus, some curious Apodes, Esocidæ, and a Pleuronectes; also some pretty things allied to the Percidæ. I hope the rum, which I have renewed, will preserve them until they reach you: tomorrow, I will get a case made for the barrel, which is leaky, and paint it thickly over, as it is not safe to send it loose.

"I have now summed up the expenses of the four months' trip; it amounts to £50, within a few shillings. I went to work in the most economical manner, denying myself all luxuries and conveniences, and I don't think I, or any one else, can travel thus in one's own vessel, so cheap again. I am afraid it will not pay, and that we must come to the conclusion that districts where one cannot travel by favour as passenger, avoiding the expense of a vessel, and a lot of lazy natives (one item of my expenses is £6 for rum, chiefly given away), are not remunerative to explore; and therefore, where there are not civilized towns, I, for one, shall not attempt to travel again.

"My private collection of insects I still retain; it preserves very well in Downie's boxes, and I find it very useful for comparison of fresh captures: it contains 2200 specimens, singles and pairs only, nearly all Lepidoptera and Coleoptera, and of course has a glorious amount of new things. Since my insects were packed I have resumed my excursions, but to avoid too much fatigue, only three days a week. I have added about half-a-dozen new and curious Diurnes. The weather is unprecedentedly dry, nearly three months without a shower! Vegetation is withered up, except in virgin forests along the watercourses beyond the campos of Santarem.

"I was not successful in shells up the Tapajos; I arrived at a place where the Anastoma certainly was abundant, but I saw only dead bleached shells in the clearings; the natives told me they never saw it alive, but suppose it conceals itself under old logs &c., and is burnt up when they burn their clearings, and only comes out in the wet season. I tried every means I knew of to procure the living shell,—dug about roots of trees, turned over great numbers of rotten logs, got a good many felled trees chopped up, searched in moist forests, and dug by banks of creeks, &c., and now suppose it conceals itself deep in the earth in the dry season, and that this is the reason I could not find it. I send a few of Helix rosarea &c.

"I am delighted to hear that my paper on the Megacephali is to be so much honoured as to be published in the 'Transactions of the Entomological Society,' and now look forward anxiously to receive a copy. I found no Megacephali in the Tapajos, although I searched the vast tracts of sandy beaches in the river; the cause of their absence, and that of other shore Coleoptera, is the abundance of a voracious stinging ant, which swarms on all the shores to an extent I can give you no idea of: it is so annoying, that villages have been forsaken on account of it: one cannot land on any shore without being instantly overrun and stung severely. These ants burrow in the sand, and there is scarcely a square inch of ground on the Tapajos shore free from them: what sand-insect can stand against such an enemy?

"I hope some of my specimens of medicinal and economic Botany may prove curious and saleable. I have never lost sight of the subject, chiefly from my desire to serve my good friend, Mr. Saunders; but in a country so uncivilized as this is, it is impossible to get up the series of specimens as they ought to be. 1. There is no trade in wood or timber; and it is only on a chance occasion that a carpenter here gets more than two or three of the common kinds of wood: even of these woods, I have tried to coax one or two carpenters to make up for me a few squares, for payment, of course, but it is out of their regular way, and they won't do it. 2. In the midst of such a vast variety of trees in the forest, it is difficult to find the particular species of tree you have an illustration of (say the wood), and want a flower, a piece of bark, &c.; and it is only a very few persons who can thus recognise the few known and useful trees, the far greater part not having even native names. If you get a rare chance of seeing a tree in the forest, say a Masaranduba or an Itariba, ten to one it is not in flower or fruit, and your guide cannot tell you when it does flower. All this has happened to me repeatedly, and I despair of getting up the illustrative series of economic Botany complete. I have, as you will see, often sent you a branch of leaves only of some interesting trees.

"I am now uncertain as to my future proceedings, and depend much on results of sales of the collections of May and June, your letters about which I am daily expecting. There is still enough for a six months' journey up the Tapajos, going at least 100 or 200 miles above my last point; but we must conclude that there in not a great difference in the insects in this direction, such as takes place about Ega: and besides, the moist forest valley ceases about 200 miles up, when insects are undoubtedly much fewer. If the report is true that a steamer is about to run from Pará to beyond Ega, there is a chance of my again visiting the marvellous country of the Upper Amazons. From Santarem there is no conveyance to Ega: to buy a canoe, and go up on one's own account, by easy stages, as you once proposed, has only one difficulty — hands to work it, and that I find nearly impossible to surmount. Indians cannot be got by any means a poor stranger like myself can command. Considering these things, I think it better not to send me any parcels after the receipt of this: for if I see no chance of being further useful in this country, I shall leave for England about April next; if I meet with a good chance of going up to Ega, of course I will write to you immediately, to make other arrangements.

"After all, I think our great difficulty is want of means of travelling liberally. If one could spend £200 or £250 a year, have a handsome canoe, a well-paid pilot, &c., with goods &c. to make liberal presents with, one could go anywhere, and meet with every assistance.

"An intelligent Spaniard came down from Quito *viâ* the Napo the other day. He said the privations of the voyage on the river were such, that to return to Quito he preferred going round by Cape Horn. He came down with the current; how much worse then would it be to work up against the current, for ten months prisoners in a canoe!

"H. W. Bates."

## NOTICES OF NEW BOOKS.

### '*The Annals and Magazine of Natural History*,' *No.* 65, *dated May*, 1853.

This number of the 'Annals' contains the following papers: —

'On the Occurrence of Palms and Bambus [Bamboos] with Pines and other Forms considered Northern, at considerable elevations in the Himalaya.' By Major Madden, H.E.I.C.S., F.R.S.E., M.R. Dublin Society.

'On the Genus Pachybathron, and on some new Species of Marginella.' By J. S. Gaskoin, Esq.

'Remarks upon British Plants.' By Charles C. Babington, M.A., F.R.S., F.L.S., &c.

'On the Genera of the Tribe Duboisieæ.' By John Miers, F.R.S., F.L.S.

'On Marine Vivaria.' By William Thompson, Esq.

'Rambles in Ceylon.' By Edgar Leopold Layard, Esq.

'A Revision of the Genera of some of the Families of Conchifera, or Bivalve Shells.' By J. E. Gray, Ph.D., F.R.S., V.P.Z.S.

Bibliographical Notice:—'Revue et Magasin de Zoologie.' Par M. F. E. Guérin Méneville.

Proceedings of Learned Societies:—Royal Institution—Zoological Society.

Miscellaneous:—On the Nervures of Leaves and their distribution; by L. von Buch. On the occurrence of large quantities of the Shells of Anodonta cygnea on the Sea-coast near Sandgate; by Francis Brent, Esq. Description of a new Genus of Gorgoniadæ; by J. E. Gray, Ph.D., F.R.S., P.B.S., &c. Note on a new Species of Francolin; by Dr. Nicholson, H.E.I.C. Medical Service.

From Mr. W. Thompson's paper 'On Marine Vivaria,' it appears that he has for some years been following up, and with complete success, Mr. Warington's plan, of keeping the water pure by preserving the balance of animal and vegetable life. The experiment is a most interesting one; and the cases constructed for this purpose at the Zoological Gardens, Regent's Park, will doubtless be a source of great attraction during the present summer.

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## *On the Persecution of Birds and Animals, unhappily so general in this Country.* By the Rev. Alfred Charles Smith, M.A.

In my "Notes on the Natural History of Norway," I have already alluded to the continual and wanton persecution of birds in England, as contrasted with their kind treatment in Norway; and their consequent confidence and familiarity with man in the one country, their shyness and fear in the other. Perhaps some may be inclined to think that this difference arises from the very scanty population of the one country, and the swarming multitudes of the other: undoubtedly, the two countries are widely different in respect to population; but while numbers of inhabitants on the one hand may have the effect of causing greater wariness in birds, on the other hand they produce greater familiarity with man. At any rate, whatever effect this may have, I must still assert that I fear our own countrymen cannot lay claim to that universal kindness towards the animal creation, which is so remarkable in the Norwegian character.

Now the persecution of which I complain is twofold. 1. That crusade against birds and animals, which arises from the erroneous impression that they are injurious to the farmer and gardener. 2. The indiscriminate and wanton persecution of all kinds of birds and animals, for no cause or purpose whatever. I am sure the readers of the 'Zoologist' will agree with me, that this is a subject well deserving the attention of naturalists; and if we could induce a dispersion of narrow-minded prejudices, and an adoption of greater benevolence towards the animal kingdom, we should do more for our favourites, than volumes of anecdotes in their praise. To effect this desirable object is undoubtedly difficult, as we have to contend with false impressions long entertained, with deep-rooted and long-established views of expediency, handed down, in many cases, from our forefathers, as well as with a certain innate love of destruction peculiar to mankind from the days of Nimrod to the present time: we are often met with most dogged obstinacy, most persevering determination to cling to the old custom, irresistible ignorance, and secret but not the less strong suspicions that we are concealing the truth. Perhaps this prejudice is strengthened, in some measure, from the well-intentioned but often erroneous arguments of many warm-hearted naturalists themselves: in defending their favourites, they often overrun the mark; and, too loud in their praises, and too eager to acquit them of committing injury, they do not perceive that they are but strengthening the preconceived opinions of their opponents, who, *knowing* that rooks *will* eat seed sown, and that moles *will* stop drains, see that their defenders are one-sided arguers, prejudiced on their side, in their behalf, and so turn a deaf ear to their arguments. But now let the cause be fairly and truly drawn; let nothing be concealed; let the injuries as well as the benefits done by the bird or animal be clearly shown, and I have little fear for the result. Men will learn to see how wonderful the balance held by Nature without the intervention of man; that He who gave the bird his life to enjoy, at the same time provided food for the sustenance of that life, without any dependance on man. The rook may be tempted by the newly sown and newly springing corn, or by the ripening crops; but during all the rest of the year what thousands of grubs does he not destroy — what multitudes of wireworms which lesser birds with weaker bills cannot reach? The mole may burrow into the drains, and, in a well-drained farm, may do considerable damage; but, for the generality of land, what an ally to the husbandman — what a destroyer of grubs! But I did not mean, in this paper, to show the comparative benefit or injury effected by these or any particular species of the furred or feathered race; for this, let me refer the reader to those admirable 'Essays on Natural History,' by Mr. Waterton (and particularly to the Essay on the Barn Owl in the first series, and to those on the Rook in the first and second series), to Bishop Stanley's little work on birds, to the 'Zoologist' *passim*, and other sources of similar information. My object is merely to call attention to this fact, the perception of which, I am truly glad to say, is daily gaining ground amongst the farmers and others in this country, namely, that indiscriminate and wholesale destruction, and in some cases, even the extirpation of certain animals and birds formerly so much in vogue, is not expedient, but the contrary. Well-timed expostulation may, I think, very often remove prejudices long entertained against them; but nothing can be so convincing to the farmer and gardener as actual proof, which dissection enables us readily to offer.

With the first class of persecutors, who wage systematic war with certain of God's creatures which they suppose to be injurious to them, I advocate gentle means, as most promising of success. They have, or think they have, some reason for their enmity, and so deserve to be met with courteous though earnest remonstrance, kind though firm arguments, gentle though grave expostulation. Not so with the second class of persecutors, to whom I have already alluded, who wantonly, and from the mere love of cruelty, never lose an opportunity of destroying or injuring the animal creation: with these I would counsel open and incessant war. Now, it is hardly necessary for me to remind any observer, that such a general and cruel persecution of animals, whether birds, beasts, or insects, does prevail in this country to a very great extent, and especially among the lower orders; every one will know how the accidental appearance of any creature within the grasp of the labourer, is usually the certain signal for its murder. Who ever heard of a poor innocent field-mouse being spared, if he strayed within the reach of the digger's spade? Who ever heard of the harmless hedgehog being suffered to remain rolled up in his prickly coat till danger was over, and then to trot back to his cover, without being kicked to death by the iron-clad boot of the hedger, or crushed by some deadly weapon? Who ever saw the poor snake suffered to continue his path through the grass, unharmed by the vindictive stone or the murderous stake? Where is the man or boy that gave back liberty to the poor bird which has accidentally fallen into his hands? Where the peasant who has neglected the opportunity to maltreat the insect, be it cockchaffer, or butterfly, or any other, that has come within his grasp? I fear we should search in vain for such kindly feeling amongst the uneducated part of our community; and too often is their example followed by those whose education should have taught them that they have no right wantonly to destroy that life which the universal Creator has given His creatures for their enjoyment.

As an instance of this thoughtless cruelty, I must give an account that has just come to my notice. Some labourers were pulling down an old wall, in the thickness of which they found one of those phenomena, so frequently heard of and so unsatisfactorily accounted for, a toad completely embedded in stone and mortar. "There was no doubt," said the labourer who described it, "that he had been there for a great number of years, for there was no hole or chink by which he could have entered or left the place of his long sojourn." "Well," said the listener to his account, "but are you sure that the toad was alive when you found it?" "No doubt of that, Sir," said the man, "for he crawled out of his round hole, and was moving away, when I knocked him on the head with my pickaxe." So here was this poor harmless creature, whose long incarceration in his gloomy dungeon might have excited compassion in his favour, suddenly released from his prison, only to be slain by his liberator! Well might this toad (if toads be musical) have sung those touching lines at the close of 'The Prisoner of Chillon:'—

"It might be months, or years, or days,
I kept no count—I took no note,
I had no hope my eyes to raise,
And clear them of their dreary mote;
At last men came to set me free,
I ask'd not why, and reck'd not where,
It was at length the same to me
Fettered or fetterless to be,
I learn'd to love despair.
And thus when they appear'd at last,
And all my bonds aside were cast,
These heavy walls to me had grown
A hermitage,—and all my own!
And half I felt as they were come
To tear me from my second home."

It is marvellous how naturally the death of the toad ensued in this man's mind upon his discovery; and yet, there is no reason to set him down as unusually cruel and wanton. Any other labourer in his place would probably have done the same thing; they have seen nothing but persecution against such creatures, and they do but follow the practice of their fathers.

It is therefore, as I conceive, a subject by no means beneath the notice of our most scientific zoologists, ornithologists and entomologists, to endeavour, by any and every means in their power, to bring about a kindlier feeling in the people of this country towards the animal creation, by never losing an opportunity of pointing out the uselessness and the cruelty of such persecution. It is a subject on which the country gentleman may expatiate with advantage to his labourers and servants; and it is one that may most deservedly and properly be introduced by the clergyman in his parish school, and instilled into the hearts of all his people. And I am quite sure it will ever be found, that those who practise systematic kindness to the animal race, are far more kindly disposed to the human race, are far more amiable and gentle towards their fellow creatures, and have better hearts as Christians, than those who wantonly and cruelly persecute and destroy the wonderful and beautiful creatures which the Almighty, in His infinite wisdom, has made and endowed with life and with feeling.

ALFRED CHARLES SMITH.

Yatesbury Rectory, Calne,
May 6, 1853.

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*Occurrence of the Otter in Derbyshire.*—The following may be interesting to some of the readers of the 'Zoologist,' and will support, by additional evidence, my friend Mr. Wolley's communication in the April number, (Zool. 3843). My cousin, Sir J. Harpur Crewe, of Calke Abbey, co. Derby, has now in his possession, stuffed, a beautiful pair of full-grown otters, which have been taken within the last three years by his keepers, on the banks of the Trent, in the neighbourhood of Calke. — *H. Harpur Crewe; 17, Cavendish Road, St. John's Wood, April 15, 1853.*

*Occurrence of the Water-shrew* (Sorex fodiens) *at Castle Eden.* — On Friday last, the 6th instant, a party of nine or ten of these beautiful little creatures were seen running along a path in a plantation in this place (Castle Eden), about a mile from any water. I obtained one of them, a full-grown male. The water-shrew has never before been observed in this neighbourhood, so far as I can learn: its habits, of course, might easily conceal it from observation; but the occurrence of so large a party, in such a situation, seems to suggest the idea that possibly, like some of its congeners, the water-shrew migrates at times to a considerable distance from its usual haunts.— *H. B. Tristram; Castle Eden, Durham, May 10, 1853.*

*Anecdote of a Cat and a Kestrel Hawk.*—I am indebted to a lady of my acquaintance for the following incident: — A tame kestrel, which is kept in a garden with one wing cut, has contracted a friendship with a cat inhabiting the same premises, which the latter reciprocated on a recent occasion by bringing a live mouse, and putting it down before its friend the hawk, who immediately attacked and devoured it; the cat in the mean time sitting quietly by at a short distance, complacently observing its ally enjoying the result of this display of feline benevolence.—*J. H. Gurney; Easton, Norfolk, May* 17, 1853.

*Note on the Geographical Distribution of Accipiter Tachiro and Terekia cinerea.—Accipiter Tachiro.*—The Norwich Museum contains an adult male specimen of this fine sparrow-hawk from the neighbourhood of Erzeroum, in Armenia. I am not aware that any other localities have hitherto been quoted for this species, than the southern and eastern portions of the African continent. *Terekia cinerea.*—The Norwich Museum also contains a specimen of this curious little wader, in nearly full breeding plumage, obtained in South Africa. I am not aware of this bird having been included in any list of African birds, although it is known to exist in Europe, Asia and Australia.—*J. H. Gurney; Easton, Norfolk, May* 17, 1853.

*On the Occurrence of the Golden Oriole* (Oriola Galbula) *in Norfolk.*—Two specimens of the golden oriole were sent to Norwich to-day to be preserved: they were both very fine male birds, and both in the flesh. One had been shot at Kenninghall, and the other at Dilham, the distance between the two localities being rather under thirty miles in a straight line.—*Id.*

*Occurrence of the Golden Oriole* (Oriolus Galbula) *near Weymouth.*—On the 4th of May, an adult male of the golden oriole (*Oriolus Galbula*) was shot near the village of Fleet, which is about three miles to the westward of Weymouth. I have this day seen it, and believe this to be its first occurrence in Dorsetshire.—*William Thompson; Weymouth, May* 7, 1853.

*Occurrence of the Jacamar* (Galbula ruficauda) *in Lincolnshire.*—The record of the occurrence of the Apteryx at large in Wales (Zool. 3845), induces me to mention an instance of a straggler, captured in England, of a species scarcely less likely to be found in these latitudes. In the spring of 1850, I was told by a friend, the Rev. J. Brewster, of Greatham, and of Laughton, Lincolnshire, that his butler had obtained a bird which he believed to be new to the British Isles. I called on the man and procured the bird, which proved to be a specimen of the jacamar (the *Galbula ruficauda* of Cuvier, *G. Leptura*, Swainson), a female in perfect plumage, though badly mounted. On further inquiry I found that the bird was shot in the month of June or July, 1849, by S. Fox, the gamekeeper of H. Bacon Hickman, Esq., on a manor adjoining Laughton, in the parish of Gainsborough, Lincolnshire. It was flying over a small brook in a wood, apparently in pursuit of butterflies, and bore no marks of having escaped from captivity. Mr. Brewster's butler received it in the flesh, when quite fresh, and neither he nor the gamekeeper had any idea of its ornithological curiosity, but took it for a singularly marked kingfisher, which in its flight they said it resembled. I mentioned the circumstance to Mr. Yarrell, who expressed himself as quite at a loss to account for the capture of such a bird in Lincolnshire. I am not aware of its ever having been found North of Trinidad, much less on the eastern side of the Atlantic. Has such a bird ever been brought to this country alive? From its insectivorous habits I scarcely think this possible; and yet, how otherwise could it have found its way to the eastern side of the British Isles? I simply mention the facts relating to the specimen in my possession, and shall be glad if any of your readers can throw light on the subject. I should have communicated its occurrence before, but that I had a dread of the prevalent anxiety to include every captured straggler in the catalogue of British birds. Its claims appear as good as those of the Australian spine-tailed swallow, or the Asiatic minor grackle; and yet, I trust you will agree with me, that clear as is the evidence of its capture at large within the four seas, it would be ludicrous to assign to the Galbula ruficauda a place in the list of our denizens and visitors.—*H. B. Tristram; Castle Eden, Durham, May* 10, 1853.

*Susceptibility to cold of Sylvia Trochilus.*—The weather on Saturday last and yesterday was extraordinarily cold, with snow on both days, and last night we had severe frost. Under a Portugal laurel, close to the house, and in which it had evidently sought shelter from the cold wind, we found a willow-wren dead; and in a hollow formed by a defective brick, on a level with the ground, under the same evergreen shrub, lay two more, also dead. Had the odd bird escaped? Two or three yards off was another little evergreen, similarly situated against the wall of the house; I looked under it, and there was the odd bird, also dead, evidently from cold. In woods and thickets they would creep into the long grass, and so, for the most part, escape: but we have here an adequate cause wherefore these pretty but susceptible visitors cannot come to us at an earlier period, much less remain with us through the winter. The absence of insects is not the only reason they must quit our shores before the winter's cold arrives.—*W. H. Wayne; Much Wenlock, Salop, May* 10, 1853.

*Occurrence of the Blue-throated Warbler* (Sylvia suecica), *the Little Auk* (Uria Alle), *and the Black Redstart* (Sylvia Tithys) *near Worthing, in Sussex.*—I beg to inform you that I have this morning received from a friend at Worthing, near which place it was shot on the 2nd instant, a female specimen of that rare British bird, the blue-throated warbler. From an examination since it has been skinned, it appears to have fed exclusively on small beetles, and is exceedingly fat. No previous record of the occurrence of this bird is given in the pages of the 'Zoologist.' I have also received from the same locality a beautiful specimen of the little auk, and a female example of the black redstart; the former of which was shot on the 15th of November, and the latter on the 23rd of that month.—*J. W. Stephenson; 2, Loudoun Place, Brixton Road, May* 4, 1853.

*Note on the Black Redstart.*—Another example of the black redstart occurred near Bembridge at the end of March. The day following its discovery, we proceeded to the place where it had been first seen, a large meadow sprinkled over with recently cut timber. We had scarcely made one round of the field, when the peculiar "ducking" action of a bird alighting on a trunk attracted our attention, and on nearer approach the fiery tail, as the bird flew off, showed we were not mistaken. The bird was restless rather than shy, and kept taking short flights from one heap of faggots to another, occasionally settling on the turf, as if in search of insects. On securing it, it proved a middle-aged male, and I am pretty confident that I afterwards saw a second individual on the same spot. Does not the occurrence of these birds, at the time of the spring movement, tend towards explaining the course of their migration, especially since we hear that they are not very uncommon as winter visitors in Devon? It seems to me quite possible that these birds, when seen in the Isle of Wight, were at the time proceeding towards their summer quarters, moving in a direction from West to East along the Channel. At all events, the mild climate of our South coast would ensure a supply of insect food during the more rigorous winters of the eastern and inland parts of Europe.—*A. G. More; Trin. Coll. Cambridge, May* 3, 1853.

*Occurrence of the Continental White Wagtail* (Motacilla alba, *Linn.*) *in Sussex.*—On the 21st of this month, I saw and examined carefully five specimens of this bird, four of which—one female and three males—were shot on the 19th of this month, between Shoreham and Worthing, and the fifth at Hove, near Brighton. They are all in the possession of Mr. Swaysland, Naturalist, Cranbourne St., West St., Brighton. They may be at once distinguished from the pied wagtail (*M. Yarrellii*) by the following leading features: — The head is covered by a distinct hood of pure black, perfectly defined, and not mixing either with the gray of the back or with the white of the forehead; and the white on the cheeks and sides of the neck completely separates the black of the head from that of the throat and breast, there being no black before the shoulders: the sides also are much lighter, and the tail somewhat longer. In the female, there is no mixture of black on the back and nape, which there is in all the females of the pied wagtail which I have examined. This female had the eggs only of the size of an ordinary pin's head, whereas, in the pied wagtail, the eggs are at this time generally as large as or larger than a pea, so that I suppose the former bird to be a later breeder: I have, however, as yet seen but one female. The note is said to differ from that of the pied wagtail. I am not aware of the present species having previously occurred in Britain.—*Wm. Borrer, jun.; Cowfold, April* 25, 1853.

*Note on the Brambling Finch.*—A few days ago I obtained one of these birds from a small flock, which was attending the common chaffinches roosting in some holly-bushes.—*J. Johnson; Denby, near Huddersfield, March* 8, 1853.

*Occurrence of the Rook* (Corvus frugilegus) *in Shetland.*—I almost forgot to inform you that on the 12th of March (last month) I saw a flock of about thirty rooks feeding on some cultivated land about a mile from my house. Although the rook is a very common bird in England, it is very rare here, as the above are the first I have seen in Shetland. — *Robert Dunn; Helister, near Weesdale, Shetland Islands, North Britain, April* 11, 1853.

*Occurrence of the Hoopoe* (Upupa Epops) *near Selborne.* — On Tuesday last, the 3rd instant, as I was driving from this place towards Alton, on the very confines of the parish, a fine hoopoe rose from behind a hedge, and flew over it into the road. It continued its flight before me for about fifty yards, and then disappeared over the hedge. There was a drizzling rain, and I was in haste, so that I could not stop to watch it; but I shall keep a good look out, in the hope that I may be able to ascertain whether it has a mate, and whether they may possibly breed here. As I am not one of those ruthless collectors who shoot every interesting bird they may find, I shall say nothing about its habitat here, but endeavour to leave it in quiet. You will doubtless recollect Gilbert White's pretty notice of the occurrence of this bird on the very spot on which I can at this moment look out (for I am writing within a few yards of the place where he describes them as as "walking in a stately manner, feeding in the walks, many times in the day"), and which account you will find in his eleventh Letter to Pennant. The whole paragraph is very pleasing. In the very year in which I first came to this place, a pair of hoopoes were seen on the lawn of my excellent friend and neighbour, the Rev. Mr. Snow, of Newton Vallance. Mr. Yarrell, in his 'History of British Birds,' mentions Dorsetshire and that line of coast as particularly the haunt of hoopoes; and I remember, when I was a very young man, I think about the year 1810, a fine specimen being sent to me at Poole, which had been shot at Wareham.—*Thomas Bell; Selborne, May* 6, 1853.

*Occurrence of the Hoopoe* (Upupa Epops) *in May, in the Isle of Portland.*—I beg to record the occurrence of the hoopoe, *not* on account of its rarity of late years in this county, as specimens are obtained every year. The subject of this notice was shot yesterday, the 6th of May, in the Isle of Portland: all the other specimens that have come to my knowledge have been obtained in the months of April or September.—*William Thompson; Weymouth, May* 7, 1853.

*Note on the early appearance of the Quail,* (Coturnix vulgaris). —A female quail, having been noticed for several days near some stacks, was shot at Threxton, near Watton, on the 1st of March, the snow being then quite deep.—*L. H. Irby; Saham, Norfolk, April* 16, 1853.

*Occurrence of the Stone Curlew* (Œdicnemus crepitans) *near Thetford.*—A pair of stone curlews were also shot near Thetford, when the snow was quite deep.—*Id.*

*Note on the abundance of Woodcocks.* — I have to observe that no less than twelve of these pretty visitors have been obtained here since October last. For the last four or five years not more than one or two at the most have been killed annually. This locality is bordering on the high moors. — *J. Johnson; Denby, near Huddersfield, March* 8, 1853.

*Note on Woodcocks' Nests in the Forest of Bere, and in Highden Wood, Hants.*—On the 28th of March, I was out walking in the Forest of Bere, with Sir Jervoise Clarke-Jervoise, Bart., of Idsworth Park, Hants. We had the rabbit-beagles with us, and they flushed as many as twelve or fifteen woodcocks during the time we were out. The woodcocks frequently rose two at a time, which, together with their heavy owl-like flight, showed that the breeding-season had commenced. One couple in particular got up with a good deal of fuss, and evidently had a nest or young close by; for they flew a very short distance in a semicircle, and one of them performed in the air evolutions similar to those of a peewit when its nest is approached: it also gave a peculiar cry, which I think worth mentioning, as it is the first time I ever heard (and I never heard of) a woodcock uttering any sound. We continued our walk with our "eyes open," and at length Sir J. Clarke-Jervoise had the good fortune to flush one close to him; and on examining the place whence it rose he found the nest, containing four eggs. He most kindly allowed me to take one of the eggs for my collection. On blowing it, it appeared to have been sat upon for four or five days; in which case, the nest must have been formed and the eggs laid when the ground was covered with snow, and even when we found it, the ice had not entirely disappeared. The bird deserted her nest, and so, of course, the remaining eggs were taken, and, through the kindness of Sir J. Clarke-Jervoise, another has been added to my collection. This is the first instance of the woodcock's *nest* being discovered here, but the young birds have occasionally, for years past, been found by the keepers; and there is no doubt whatever that they breed here regularly. The keeper, on whose beat the nest was found, told me that he could now, sometimes of an evening, get at least twenty good shots at them as they are "flighting about:" the other keepers also speak of the numbers they see when out on their rounds about dusk. It is gratifying to know that every possible protection is given to these interesting birds, and that Sir J. Clarke-Jervoise makes it a rule never to kill a cock after the last day of January, thereby giving the survivors of the previous campaign every encouragement to try a domestic life in England, and time to prepare for a matrimonial choice on Valentine's day. Many of the woods about here are admirably adapted for the woodcocks to breed in; and if Sir J. Clarke-Jervoise's rule, of letting them rest after January, were adopted generally in the neighbouring preserves, "a day's woodcock-shooting" in Hampshire might be worth coming some distance for; at any rate, would not be so problematical a thing as it is at present. The poor woodcock is looked upon too much as a stranger, who is only to be here a few days, and will never come back; a most erroneous idea, as has been frequently proved on the highest authority: the consequence is, that the moment he is flushed there is a hue and cry, and every gun within a hundred yards is let off, "on the chance; because you know one should always fire at a cock!" Since writing the above, I have been told that a woodcock's nest has been found in Highden Wood, about four miles from here. It was discovered by a woodman who was cutting some copse-wood, and contained four eggs. As some accident invariably happens when a bumpkin gets hold of anything rare, so this case, though it followed the rule, did not prove it by being an exception, for the man rolled up the eggs in his smock frock and sagaciously sat upon them; not, however, with the same happy result as would have attended the incubation of the real bird.—*William Henry Hawker; Horndean, Hants, April* 22, 1853.

*Woodcocks breeding in this country.*—On Monday, the 25th of April last, a young woodcock, about half grown, but unable to fly, was brought to my father by his gamekeeper, who found it, with two others, running about in a copse at Bloxworth, Dorset. Now, to have arrived at this size by the 25th of April, they must at least have been hatched by the first week of that month, so that the eggs were probably laid by the 10th of March, perhaps earlier. I was not aware that the woodcock ever nested so early as this, though I have always known it to be an early breeder. Does not this, then, show the bad policy, to say the least of it, of shooting woodcocks, as is commonly the case, "whenever they can be got at?"—though I must myself plead guilty to having been instrumental in the death of eleven birds out of twelve found, on the 10th of March last, in covers only a short distance from that in which the young ones were found. All these twelve birds were in *pairs*, and perhaps some of them would have bred there, or, indeed, might *then* have had nests with eggs. Had I at that time known of its nesting so early, or that there was so fair a chance of their breeding with us, I should by no means have molested them; but I only then knew that they did occasionally breed there, for a neighbour's keeper found some young ones, two or three years ago, in an adjoining wood, though whether that was as early as April he did not tell me, and this is the only other instance that has ever come to my knowledge. Late in the season, towards the middle and end of March, up to which time they are considered fair game, woodcocks lie very close and in pairs, and when put up, drop again almost immediately, so that (the length of the day also telling against them) there is no part of the season at which they are so sure of being eventually bagged. Added to this, nearly all other shooting being over, woodcocks are increasingly persecuted whenever a day's shooting is wanted by those whose sporting ardour has not quite cooled down for the season. Woodcocks also fall an easy prey at this time to the keepers, who, released from attendance on shooting-parties, are then busily employed in killing rabbits; and as on these occasions every understrapper who can hold one musters a gun, to aid in the extermination of rabbits, the unfortunate woodcocks get but a poor chance; and I have myself seen, on such an occasion as this, a woodcock that had been flushed several times, and after escaping repeated volleys fired by these understrappers, at last fall by an accidental shot from the gun of the worst marksman among them. All this, then, seems to me amply to account for the few known instances of their breeding, at least about us. Though I have long thought that woodcocks should not be shot after the 1st of March, I have hitherto, for want of a conclusive reason to the contrary, continued the usual practice of killing them whenever to be found, in some years even up to the 1st of April; however, for the future, they will be intact, by me, after the 14th of February: and I now firmly believe that most of those which I killed on the 10th of last March, would have bred there had they been spared, for the ground is in every way what one would suppose well suited for the breeding and rearing of this bird. I trust therefore that all who may read this will, in time to come, give them a chance of breeding in this country, by allowing them to go free after the 14th or so of February; and I doubt not, if this plan were pretty generally adopted, that it would materially increase the number of birds in the ensuing season, and make their nesting in England a comparatively common occurrence. Since writing the above, I have learned that a pair of woodcocks were also seen by my brother on the 6th of April last, while hunting his beagles, in another copse at some distance from that where the young ones were found. — *Octavius Pickard-Cambridge; Hatch Beauchamp, Taunton, Somerset, May* 12, 1853.

*Occurrence of the Great Snipe* (Scolopax major) *near Durham.*—Two or three specimens of the great snipe were obtained in this neighbourhood during the winter, and they are considered to be pretty regular winter visitants. The Hon. Augustus Barrington informs me, that some thirty or forty years ago, as he and his brother, the present Lord Barrington, were shooting on Fishburn Car, about half way between Castle Eden and Darlington, they killed, in the month of *August*, four solitary snipes, two of which were young birds, scarcely fully fledged. This is the only instance I ever heard of this bird breeding in Britain. So careful an observer as Mr. Barrington could hardly have mistaken this snipe, and the singularity of the occurrence imprinted the fact on his memory, although he was not aware at the time that the nest of the solitary snipe had never been found in this country. Last summer I met with this bird in vast numbers along the coast of Nordland and Finmark. In one marsh near Bosoë, we obtained I think seven brace in half an hour, in the month of August, the young birds being fully fledged.—*H. B. Tristram; Castle Eden, Durham, May* 10, 1853.

*Occurrence of the White-winged Black Tern* (Sterna leucoptera) *near Yarmouth.*—This bird was killed on the 17th instant, by Mr. Robert Rising's keeper, at Horsey, near Yarmouth. Three or four of the black tern were killed at the same time with it.— *George Trederick;* 11, *Charles Street, Westbourne Terrace, May* 21, 1853.

[I have seen this bird in the flesh, and can state therefore that it is an example of the white-winged black tern.— *W. Yarrell; May* 21, 1853.]

*Occurrence of the Little Gull* (Larus minutus) *in Shetland.* — On Thursday, the 7th of April, I had the pleasure of shooting a specimen of the little gull (*Larus minutus*). When I first saw it, it was flying by itself at a distance, and from its small size I fancied it was one of the tern tribe, but as it came nearer I readily perceived, by the roundness of its wings and the shortness of its tail, that it was not a tern. As it flew, it kept dipping down to the sea every here and there, as if picking something off the surface of the water. It flew past us once out of shot, but did not go far before it turned again, we crossed it with the boat, and I was fortunate enough to shoot it as it flew past. It is an adult female, in fine plumage, excepting that the head was moulting from white to black. This, and an adult specimen of the Iceland gull (*Larus leucopterus*), which I shot on the 22nd of November, 1852, together with three or four adult glaucous gulls (*Larus glaucus*), are amongst the rarest of the birds which we have shot in Shetland this winter.—*Robert Dunn; Helister, near Weesdale, Shetland Islands, N. B., April* 11, 1853.

*Occurrence of the Masked Gull* (Larus capistratus) *in Sussex.*—On the 25th of February last, I received a living specimen of a gull, which I suspected to be the masked gull (*Larus capistratus*) of Yarrell's 'History of British Birds' (iii. 430), in a transition state between the summer and winter plumage, showing a few dark feathers behind the eye and on the front of the head, but the occiput and back of the neck being pure white. Having pinioned it, I put it on a pond with other gulls, &c., and it soon began to assume more dark feathers on the head and face, and has now, April 25th, fully assumed the mask, the back of the neck and the occiput being still *pure white*, so much so, that when the bird is running or swimming away from the spectator, no dark colour is visible. This is a mature bird, the tail being pure white. It was caught off Brighton, the day before it was sent to me: I am not aware of any record of its having before been obtained in the South of England."—*Wm. Borrer, jun.; Cowfold, April* 25, 1853.

*Note on the Reproduction of Frogs.*—Mr. Edward Lowe's paper on the reproduction of frogs without the presence of water, which appeared in the 'Annals' for April, and is quoted in the 'Zoologist' of this month (Zool. 3871), is one most deserving the attention of all naturalists. In support of Mr. Lowe's fifth observation, I cannot help sending you these few remarks. Year after year I have observed the same circumstance, and to account for it has always been to me the greatest puzzle. It was in a wine-cellar that the frogs were seen; the exact position of which I must first attempt to describe. This wine-cellar had no other entrance than a close-fitting door, under which a moderate-sized frog could not possibly pass; nor do I think that even young ones, such as those seen, could have done so, but of this I cannot speak for certain. This door opened into a dairy, having a window communicating by a small area with the garden. Minute frogs were found continually, two or three years following, among the damp sawdust in the cellar. They were *very small*, not larger than if they had just assumed the perfect state. And now, as to how they got there. Is it possible that they were brought into the cellar with the sawdust, and, from want of food, did not increase in size during that lengthened period? I should say not. We have now two propositions left:—either they must by some means have found their way into the cellar, or they must have been bred in it. The nearest water to the cellar was a small pond in a field separated from the garden by a deep walled *ha-ha;* but I have never seen any tadpoles in that pond, nor do I think it likely that there would be any there, as the water is very pure, coming from a spring not far off, and running in and out of the pond in a continued stream. But granting, for the sake of argument, that the frogs might have been bred there, to have reached the cellar they must have crossed the field, mounted the perpendicular wall of the *ha-ha*, traversed the garden, passed through the area and window into the dairy, and thence under the door into the wine-cellar, and this, too, in a party of some dozens! That frogs and toads will do wonderful things in the shape of locomotion, is a fact well known, and of this, perhaps, the most extraordinary instance on record is that given in the number for November, 1843, (Zool. 321); and while on the subject, I may as well mention one instance which has fallen within my knowledge. In a hot-bed in the above-mentioned garden a toad was wont to take possession of a particular corner. This proceeding, however, was not approved of, and the toad was unceremoniously carried to the other end of the garden and thrown over the *ha-ha* into the field. To our astonishment, however, the snug little corner of the hot-bed was not long without its tenant; in a day or two the toad was found again on its form. How did *he* get up the wall of the *ha-ha*, and what instinct led him back to his favourite haunt? We have yet much to learn about the Amphibia, for, disgusting as they used to seem to most people, they are now found to be a family perhaps more curious in their economy, and more interesting in their habits, than any other; and I trust that I shall see before long something more on this and other subjects connected with them in the pages of the 'Zoologist.' — *Alfred Merle Norman ; Clevedon, May* 13, 1853.

[Far be it from me to discourage any inquiry like this into the supposed departure from a law of Nature in the reproduction of metamorphotic reptiles: but we must not overlook difficulties that stand in the way of our receiving an hypothesis like this; such, for instance, as the following: — Suppose it impossible, or even improbable, for the *small* frogs and toads to gain access to the places where they have been found, is it not equally impossible and improbable for the *parents* to get there? Are not the parents larger than the children? To receive the hypothesis in full, we must also receive another and older hypothesis, — that of spontaneous generation! — *Edward Newman.*]

*Occurrence of the Lump Sucker* (Cyclopterus Lumpus) *at Lynn.*—A fine male example of this fish was caught in our harbour yesterday, measuring about a foot in length. It was of a bright red tint, which has however changed to-day into a dull brown. Our fishermen are catching small herrings and smelts, which may serve to account for its presence in the estuary, but the force of the flowing tide must account for its being so high in the river. Is it probable that the pair had entered the river for the purpose of spawning?—*Edward L. King ; Lynn, March* 31, 1853.

## *List of Land and Fresh-water Shells found in the Neighbourhood of Sudbury.* By WILLIAM DOUBLEDAY KING, Esq.

ENCOURAGED by observing that the inland Conchology of our own country has of late obtained occasional notice in the 'Zoologist,' I venture to send a list of such species of land and fresh-water shells as have occurred in this neighbourhood.

By far the greater part have been found within a mile of the town of Sudbury; the remainder at a distance not exceeding two or three miles. The Stour, frequently overflowing the low meadows close to the town, leaves a considerable drift of weeds &c. upon its banks, which, on examination, is found to be rich in shells, not only of the aquatic species, but of the smaller terrestrial kinds also. Many, perhaps most, are, as might be expected, bleached or imperfect; but still a large number of specimens may be thus obtained, as perfect and transparent as if found alive in their natural abode, although the animal inhabitant has, in general, wholly disappeared: thus sparing the collector the unpleasant business of killing and extracting it. I have been much puzzled to account for this circumstance, as it can hardly arise from gradual decay. Is there any race of insects which prey upon these mollusks, either in a dead or a living state, thus leaving the shells in a beautifully perfect condition? If so, my cabinet is much indebted to them for their labours.

I have entirely omitted the slugs from this list, not having collected or studied them; as well as several of the more obscure species, especially of Zonites and Pisidium, from my not feeling sure of being able to distinguish them in their different stages of growth, though I have but little doubt of their occurrence here.

Neritina fluviatilis. Numerous in the river, and extremely variable; when alive, always encrusted with mud, the removal of which appears to destroy the beautiful coloured markings, so ornamental when the shell is found dead and empty.

Paludina vivipara. Very fine and tolerably abundant in the Stour. I have kept these curious creatures in a pail of water, and had a large accession of young ones, their delicate shells adorned with spines, which disappear as they become mature.

Bithinia tentaculata. Common.

„ ventricosa. Not rare.

Valvata piscinalis and cristata. Common.

Vitrina pellucida. Now and then found in moss.

Helix aspersa. One picked up in my garden had the whorls much produced.

„ hortensis and nemoralis. Abundant.

„ hybrida. Two or three specimens I believe to be of this intermediate species.

„ arbustorum. In some moist mossy hedges near the town.

„ lapicida. Not uncommon.

„ pulchella. Excessively abundant in the drift, and, I think, inhabiting the meadow close to the river.

„ Cantiana. Common on the chalky banks, white, pale pink, and of a rufous colour.

Helix fulva. Rare, in drift.

„ aculeata. One specimen.

„ hispida. Occasional.

„ rufescens. Abundant, as elsewhere,

„ virgata. Abundant, of two very distinct varieties.

„ caperata. Frequent, on dry banks, chalk-pits, &c.

„ Ericetorum. Less numerous, but not rare; mostly without bands, and of a plain horn-colour.

Zonites radiatus. Common.

„ pygmæus. Rather rare.

„ nitens. Common.

„ alliarius. Frequent, in moss.

„ radiatulus?

„ crystallinus and lucidus. Frequent in the drift.

Succinea putris. Common.

Bulimus obscurus. Frequent in hedges.

Zua lubrica. Very abundant.

Achatina acicula. This elegant shell sometimes occurs in great numbers amongst the remains of a flood, but I never find any vestige of the animal that inhabits it.

Pupa umbilicata. On an old church-yard wall, in considerable numbers.

„ marginata. Frequent in the drift.

Vertigo pygmæa. Not rare.

„ palustris. A few specimens with the two former shells.

Balea perversa. In the bark of old willows, not common.

Clausilia bidens. One or two, in moss.

„ nigricans. Very common.

Carychium minimum. Extremely common.

Acme fusca. One specimen, in the drift.

Limnæus auricularis and pereger. Common.

„ stagnalis. Frequent and large on Cornard Mere, in pools.

„ palustris. Common.

„ truncatulus. Frequent.

Ancylus fluviatilis. Occasional.

Velletia lacustris. Frequent in the river.

Physa fontinalis. Pretty common.

Aplexus Hypnorum. A few specimens in a small stream.

Planorbis corneus Common.

„ albus. Not rare.

„ carinatus. Abundant.

Planorbis marginatus. Common.
" vortex. Very common.
" nitidus. Occasional.
" contortus. Frequent.

Cyclostoma elegans. On a bank near the village of Belchamp; large, and mostly of a buff or clay-colour, without the beautiful purple spots which ornament the smaller variety usually found near the coast.

Cyclas cornea. Common.
" calyculata. Rather rare.

Pisidium pusillum and pulchellum. In drift.
" Henslowianum. Not very uncommon in the river.
" amnicum. Frequent.

Anodon cygneus. Common.

W. D. KING.

Sudbury, April 25, 1853.

*Occurrence of Eolis Landsburgii at Weymouth.*—In my occupation here of collecting living animals and plants for the purpose of stocking the marine aquaria in the Zoological Gardens, I have been so fortunate as to meet with some objects marked in our lists as rare; I will however refer only to one species, Eolis Landsburgii, perhaps the loveliest gem of all our nudibranch Mollusca. On the 23rd ultimo I took two specimens of this charming amethystine Eolis within a few minutes; both on the under surface of stones near low-water mark (spring tide), but not in association with each other. Eolis coronata occurred at the same time, and since, in unusually fine condition: it is spawning about this time. These are the only littoral Eolididæ that I have met with here, except a single example of E. papillosa. When E. Landsburgii was published by Messrs. Alder and Hancock, it was on the authority of a single specimen. In the 'Annals and Magazine of Natural History' for January, 1852, the capture of a second is recorded by the Rev. Thomas Hincks, and the occurrence of a third is alluded to. I am not aware that this rare and beautiful creature has been seen since, until this twofold capture, which I now beg to record in the 'Zoologist.'—*P. H. Gosse; Weymouth, May* 16, 1853.

*Note on the Acarus of the Hornbill.*—In the report of the Proceedings of the Zoological Society for March 8 (Zool. 3886), it is stated that Dr. Crisp, after exhibiting a specimen of a hornbill, observed that the Acari of birds were never within the reach of the bill. As this report is entirely erroneous, you will probably allow me to give my own version of the matter. On looking over a few specimens of the hornbill (*Buceros Rhinoceros*) with my friend Mr. Bartlett, he directed my attention to the enormous number of eggs upon the feathers at the back of the head, neck, and throat. On a more careful inspection, I found that the ova were only deposited in this situation, where the bird, from the great length of the bill, could not reach them. The eggs amount to many thousands: they are placed chiefly at the base of the feathers; their numbers varying from twenty to fifty on each. Whether the hornbills generally are affected with these parasites I am unable to say; but in three living toucans (birds which bear some resemblance to the hornbills) now at the Regent's Park Gardens, I find no trace of these animals. As regards other birds, my experience does not enable me to speak. The bill of the hornbill and of the toucan is so beautifully constructed, that the smallest insect would be crushed by its well adjusted point; but the claw, I apprehend, would be of little service in this kind of warfare. Whether the mites instinctively deposit their eggs in the situation named, is a question difficult to solve; but looking to the habits of some grades still lower in the scale of creation (the coral insect, for example), I think it more than probable that the animal in question does possess this amount of instinct. On placing several of the feathers upon which the eggs are deposited under a power of 40 diameters, I find that the mite has escaped from the greater number, but in several the young Acarus may be distinctly seen through the egg-shell, the exterior of which is composed of cells of a pentangular form. I found several of the mites dead on various parts of the body, and although dry and shrivelled, their forms are tolerably distinct under the microscope. They present most of the characters of the Acaridæ. The mandibles are large, their inner edges trenchant, and their anterior extremities expanded and lobated; the legs are eight in number, with the tarsi of all terminating in a disk-like appendage. The body and legs are furnished with spines, and the posterior part of the body is pointed. In some specimens the mandibles are much smaller, but the disk-like tarsal appendage in all is very distinct. I have immersed some of these Acari in spirits of turpentine, and hope hereafter to be able to describe them more accurately. I believe they have never before been noticed, for on referring to the interesting papers, and drawings of the Acariens, by MM. Dugès, Dufour, and Gervais, in the 'Annales des Sciences Naturelles' for 1833, 1839, and 1841, I find none that correspond with those depicted in the inclosed drawings, which I exhibited at the Zoological Society.—*Edwards Crisp, M.D.; 21, Parliament Street, May* 13, 1853.

*Note on the Abstinence of Spiders.*—In the February number (Zool. 3766) there is an account, by Mr. Pickard-Cambridge, of a spider which lived for upwards of eighteen months in a stuffed bird's case, without obtaining any visible supply of food, and even increased considerably in size during that period: and in the following number of this journal (Zool. 3809), Mr. Bree remarks on this statement, that the animal must have obtained food by some means, it being impossible that it could have increased in size without sustenance. Like Mr. Bree, I was much pleased with Mr. Pickard-Cambridge's account, and, had I not been prevented by other avocations, should have offered a few remarks on this subject before, it evidently being one of much interest both to the naturalist and the physiologist. With respect to the length of time that Mr. Pickard-Cambridge's spider lived apparently without food, it has been long known to arachnologists that many species of Araneidea will bear a very protracted abstinence without any perceptible diminution of vital energy. Martin Lister, in his "Tractatus de Araneis," contained in the 'Historia Animalium Angliæ,' which he published in 1678, has the following passage: — "Aranei nihil recondunt, quòd diu sine cibo vivere possunt; per hyemem verò ex toto abstinent, et ne victum quidem quærunt;"

* * * Omni etiam anni tempore jejunium diutinum ferre possint; calidis quoque regionibus etiam per æstatem, non solùm cùm hyems eas necessariò cogat. Araneas, inquit F. Redi, tàm masculas quàm fœminas, vasis vitreis excepi; longitudinem vitæ sine alimento interalia observavi; nonnullis à 15 Julii, quo die capti erant, in finem usque Januarii producentibus,"—(p. 12). The most interesting and remarkable case, however, in illustration of the fact in question that I have been able to meet with, is narrated by Mr. Blackwall in his 'Researches on Zoology,'* published in 1834. He says, "A female Theridion quadripunctatum, captured in the month of August, 1829, was placed in a phial of transparent glass, and fed with flies till the 15th of October, in the same year, during which interval she accomplished her final moult, and attained maturity. She was then removed to a smaller phial, which was closely corked and locked up in a book-case, her supply of food being at the same time discontinued. In this phial she remained till the 30th of April, 1831, on which day she died, without receiving the slightest nourishment of any description; yet till the autumn of 1830, no apparent change had taken place, either as regards her external appearance or physical energy. Throughout the entire period of her captivity, she never failed to produce a new snare when the old one was removed, which was frequently the case; and it is particularly deserving of attention that the alvine evacuations were continued, in minute quantities and at very distant intervals, to the termination of her existence," —(p. 302). This experiment shows that spiders will live as long as the one noticed by Mr. Pickard-Cambridge, without food, but the individual in Mr. Blackwall's case had attained maturity, after which period, as with perfect insects, they undergo no further increase in size,† (the abdomen of the impregnated female being excepted); but it has been found that young individuals, if kept in confinement and only sparingly supplied with nourishment, increase very little in size, moulting only once or twice instead of five or six times in a given period, and, if altogether deprived of food, soon die. Mr. Pickard-Cambridge's spider must have obtained nutriment from some source, and this leads me to the most interesting part of the subject, namely, what was its nature? I have often examined webs made by the house-spider in wine-cellars and other close situations, some of which are perfectly dark, and have little communication with the air, and have seldom if ever found any insects entangled in them, or the remains of insects near them; and I have therefore been puzzled to know on what food the spiders subsist. Spiders and their webs may also often be seen in the corners of empty and closed drawers, in which no insects will be found. What then is the nature of their food? It appears that some species require little more than water for their sustenance (all of them live on liquid food, their mouths being only adapted to imbibe the juices of their victims), and if supplied with it will continue plump and well for a long time without any other food. Mr. Blackwall found that a pair of the

pretty little spiders named Drassus nitens, which were confined in a phial, having become feeble and greatly emaciated, drank with avidity a few drops of water which were introduced to them, and speedily resumed their strength and former plump appearance.* Though the imbibition of water is thus capable of prolonging the lives of some species, still there is no doubt that those spiders which select close and dark situations for the construction of their webs, find some living prey upon which they can feed, though they may not be able to meet with winged insects; and further observations are required to clear up this interesting subject. My own idea is, but it is only supposition, that they prey principally upon small species of Acari; for numbers of these minute and little-known Arachnidans may be found wherever decaying organic matter exists, particularly about dead wood, skins, &c., where they afford food to various insects and other animals besides spiders: for instance, to the little book-scorpion (*Chelifer muscorum*, Leach).—*R. H. Meade; Bradford, Yorkshire, April* 19, 1853.

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* This work, which contains many interesting observations on Ornithology, Arachnology, and other branches of Natural History, is, I think, but little known.

† I may here remark, that spiders cannot be strictly said to grow at any period of their existence, their increase in size taking place through the means of periodical moultings, or casting of the skin: and the number of times that this takes place is not the same in all species. It has been ascertained that the common house-spider (*Tegenaria civilis*) changes its skin nine times before it arrives at maturity; Epeira callophylla five times, and so on.

*Are Telephorus rusticus and T. lividus the Male and Female of one Species?*—This question I am induced to put in consequence of my having, for some seasons past, so very frequently taken *in copulâ* these two insects, hitherto looked upon as distinct species. The time for their appearance is again come round, and perhaps, by a little careful observation, this may be noticed in other districts. May not such affinities exist among other members of this family? And by carefully noting and recording from time to time such facts as present themselves, might not some one be tempted to undertake a general revision of this group?—*John Scott; London Works, Renfrew, May* 7, 1853.

*Note on the Impalement of Geotrupes stercorarius.*—When going home a few evenings ago, I met with a case of accidental insect-impalement. It was almost dark, and numbers of Geotrupes stercorarius were booming about. One louder and more continuous buzz than the rest arrested my attention; this I found to proceed from a Geotrupes impaled on the point of a sharp upright thorn, which had penetrated between the dorsal segments of the abdomen, near its apex. The beetle was wheeling round and round, with expanded wings, and making violent efforts to escape, but only fixing itself the more firmly at every turn. Most probably it had been struck down during flight by a twig, and falling with open wings into the hedge, had exposed a vulnerable part to the pointed thorn. I examined the beetle closely, but found it quite uninjured except where the thorn had entered. — *Thomas J. Bold; Angas's Court, Bigg Market, Newcastle-on-Tyne, May* 3, 1853.

*Occurrence of the Gray-headed Wagtail* (Motacilla neglecta) *near Penzance.* — A specimen of this bird has again come under my notice during the past week. It was observed in Marazion Marsh, and proved to be an adult male, in good plumage. — *Edward Hearle Rodd; Penzance, May* 23, 1853.

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* Lib. cit. p. 332.

## *Imperial L. C. Academy.—Election of Fellows.*

The 'Bonplandia,' the official organ of the Imperial L. C. Academy Naturæ Curiosorum, announces that the six naturalists mentioned below have received the honour of Fellowship in the Academy, with the accompanying Academical names: —

1. H. C. Beck, Pastor in Schweinfurt, ............................ = Metzger.
2. Anatol Nicolajewitsch, Prince of Demidoff, who, it will be recollected, sent the principal part of the Russian articles to the Great Exhibition of 1851,............................ = Franklin.
3. Edward Newman, of London, ............................ = Latreille.
4. F. L. Fülleborn, President of the Court of Appeal in Marienwerder, ............................ = Röschlaub.
5. F. Goldenberg, Professor of Natural History and Mathematics in Saarbrücken, ............................ = Steinhauer.
6. Philip Wirtgen, Ph.D. Director of the College in Coblentz,... = Ehrhart.

## *Proceedings of the Entomological Society.*

*May* 2, 1853.—J. O. Westwood, Esq., V.P., in the chair.

The following donations were announced, and thanks ordered to be given to the donors: — The 'Zoologist' for May; by the Editor. The 'Literary Gazette' for April; by the Editor. The 'Athenæum' for April; by the Editor. The 'Journal of the Society of Arts' for April; by the Society. 'Proceedings of the Berwickshire Naturalists' Club' for 1851; by the Club. 'Révision de la Famille des Cicindélides de l'Ordre des Coléoptères,' par Th. Lacordaire, Liége, 1842: and Monographie de la Famille des Phytophages,' par Th. Lacordaire, tome ii., Liége, 1848; both presented by the Author. 'Monographie des Guêpes Solitaires,' par H. F. de Saussure, Cahier 4, Paris, 1852; by the Author. 'Mémoires de l'Académie Royale des Sciences, des Lettres, et des Beaux-Arts de Belgique,' tome xxvi., 1851: 'Mémoires Couronnées et Mémoires des Savants étrangers,' tome xxiv. 1852: Ditto, in 8vo., tome v. 1re partie, 1852: 'Bulletins de l'Académie,' tomes xvii. 2me partie, xviii. and xix., 1851—52; all presented by the Académie. Two book-cases, by Mr. Waring; and a set of book-shelves, by Mr. Edwin Shepherd.

The Chairman stated that in consequence of several inquiries from the apple-growing districts of the country, the Council wished him to announce that the "insect-scale" of the apple, the insect whose natural history the Society had this year proposed as the subject of a Prize Essay, was the same as that known in many places as the "scale-insect" or "scale-blight" of the apple.

The Chairman also called the attention of the Meeting to copies of a Catalogue laid upon the table by Mr. Stainton, for distribution, intituled, 'Bibliotheca Stephensiana, being a Catalogue of the Entomological Library of the late James Francis Stephens, Esq., F.L.S., which has been preserved entire, and is now removed to Mountsfield, Lewisham, where it may be consulted by any entomologist, every Wednesday evening, as heretofore.'

Mr. H. Doubleday presented a beautiful drawing of the under side of a very singular variety of Polyommatus Alexis, taken near Cambridge by the Rev. Rudston Reid. The usual ocelli were absent, but on both wings was a row of strong black marks within the posterior margin, not extending outwardly beyond the red spots on the lower wings, and similarly situated on the upper wings, but there the red spots were wanting. Part only of the posterior ocelli are represented by black dots.

Mr. Bond exhibited a specimen of a Psyche new to this country, pronounced by M. Bruand, who was engaged on a monograph of the Psychidæ, to be his P. marginenigrella. Mr. Bond reared it from a case which he found attached to a tree, either in Lancashire or Yorkshire.

Mr. Edwin Shepherd exhibited a larva of Notodonta Camelina, which had been attacked and killed by muscardine; a very pale and little-marked variety of Argynnis Euphrosyne; a unicolorous variety of Fidonia atomaria; and a specimen of the rare Aleucis pictaria, taken on the 24th of April last, on the palings at Dartford Heath.

Mr. S. J. Wilkinson exhibited larva-cases of Incurvaria Zinckenii and I. masculella. They were both of considerable size, and of a broad-oval form, each constructed of two pieces of leaf neatly cut out and fastened together at the edges; the former species from the leaf of oak, the latter from the leaf of birch. The perfect insects, which he also exhibited, had emerged, leaving the pupa-skin projecting from the case, showing that the larvæ had changed to pupæ within the case. He also exhibited three specimens of the new Lithocolletis Nicellii, reared from nut-leaves, and a cocoon of a Bucculatrix? found attached to a fence.

Mr. Stevens exhibited specimens of the fine Goliath beetles, Amarodes Passerinii and Eudicella Smithii, lately received from Port Natal.

The Chairman read a note from Mr. Weaver, stating that the insect exhibited at the November meeting, reported as Bolitophagus crenicollis, should be B. crenatus; and that another Coleopterous insect should be added to his list of discoveries in Scotland, namely, Ampedus tristis, belonging to the family Elateridæ.

The following letter was read: —

"Liverpool, April 30, 1853.

"Sir,

"Perhaps the following hints may not prove uninteresting to some of the members of your Society. At your meeting on the 4th of April, a communication was received from Mr. Wilson, recommending chloroform as a means of disabling large Lepidoptera before pinning or killing them. Some years since, when in Switzerland, I took great delight in making a collection of Lepidoptera, and invariably found that the easiest way of killing the insects was by dropping sulphuric ether on their heads. This suffocates them immediately, excepting the very large kinds, and then a second dose is generally needed. In this manner I have killed Papilio Podalirius, Parnassius Apollo and Mnemosyne, Apatura Iris, Acherontia Atropos, Sphinx Convolvuli, S. Ligustri, S. Pinastri, Chœrocampa Nerii, &c.

"When the insect is captured and killed, Mr. Humphreys, in his beautiful book, mentions that 'the wings must be kept expanded by thin braces of card.' An easier plan is to have a flat board, with grooves of various sizes to receive the bodies, and then to keep the wings expanded by small pieces of glass until dry. The advantage is, that the glass presses equally all over the wings, and also that you can alwa… …e whether they are in their proper position or not.

"I remain, Sir,
"Your obedient Servant,
"J. W."

"To the President of the Entomological Society."

Dr. Dutton said that he preferred hydrocyanic acid to all other agents for destroying life in insects. He had found one drop, of Scheele's strength, sufficient to kill fifty insects; and, so small a quantity being necessary, no danger to the operator need be apprehended.

Mr. Spence communicated the following note on Termes lucifugus: —

"As the small yellow ant (*Myrmica domestica*), now become such a pest in London, might probably have been easily extirpated, had it been brought under the eye of entomologists on its first introduction from abroad, it may not be amiss to direct the attention of the members of the Society to the possible importation of a still worse pest, the Termes lucifugus of Rossi. The ravages of this minute white ant (first discovered in France at Bordeaux by Latreille), at Saintes, Rochefort, and Tournay-Charente, in the western departments of France, were described by M. Audouin twenty years ago, and the accuracy of his observations has been since confirmed by those of MM. Milne-Edwards and Blanchard in the same localities; but it appears from a paper read before the Académie des Sciences at Paris, on March 28, by M. de Quatrefage, that this insect has now found its way also into the Port of Rochelle (interesting to entomologists as the birth-place of Reaumur), where it is rapidly extending itself; and how easily it might thence be brought to our ports in the West of England, where it would find a temperature probably as well suited to its propagation as at Rochelle, need not be pointed out. This species, as Latreille observed, and as M. de Quatrefage informs us, does not confine itself to dead wood, but attacks living plants and trees, having excavated the stems and tubers of Dahlias, and the trunks and larger branches of poplars. He found chlorine the most effective agent for its destruction."

The Chairman said Dr. Burmeister had shown him the same Termes from the South of Prussia.

Mr. Stainton communicated the following extract of a letter from Count Nicelli:—

"Lithocolletis Scabiosella, *Douglas*, is a very good species. However, it is not the only species on low-growing plants, for Herr von Heyden, of Frankfort-on-the-Maine, sent me a very beautiful species, something like lautella, bred from a species of Vicia; it is L. Bremiella. Besides this, I may mention L. Sagittariella, a species allied to Faginella and Mannii, bred from broom; and another, named by him L. Staintoniella, which is allied to L. Betulæ, but much smaller, and feeds on broom."

Mr. Westwood mentioned that by a careful examination of the fragments of the Chinese wax-making Coccus, given to him by Mr. Hanbury, he had been able to find wings of the male, and dried bodies and some other parts of both male and female, so that he now thought he could make a sufficient description of the species. He had also found three species of Encyrtus parasitic on this Coccus.

Mr. Westwood also informed the meeting that specimens of a blind shrimp, found in a well near Maidenhead, had been sent to him, and that he had identified them as the Niphargus Stygius of Sciödte, found in the caves of Carniola, and of which a figure, description and account were published in the Society's 'Transactions,' vol. i. n. s. The well in question was about 18 feet deep, and these Crustaceans abounded in it to such an extent, as to render the water unfit for use. The well had been cleaned out, but the shrimps were still there, though to a less extent.—*J. W. D.*

## *Proceedings of the Society of British Entomologists.*

*April* 19, 1853.—Mr. Harding, President, in the chair.

The President announced that a box of Lepidoptera, containing between 200 and 300 specimens, had been presented to the Society for the cabinet.

The President exhibited a box of caterpillars, preserved by removing the intestines, and filling the vacant space with coloured worsted. The markings and colours were nearly as bright as when the caterpillars were living, especially in those with smooth skins. He also exhibited a pair of Anerastia Farrella, taken on the coast of Kent.

The President made some observations on the tenacity of life in Mesium sulcatum. Having placed a specimen in a pill-box in April, 1852, the box was not opened until the 5th of April in the present year, when the insect was found alive, and apparently in as good health as when put away twelve months before. That spiders will live for a long time without food is well known; but tenacity of life in beetles under similar circumstances is of more rare occurrence.

A copy of Stainton's 'Entomologists' Companion' was presented by the Author.

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*May* 3, 1853.—Mr. Harding, President, in the chair.

The President exhibited two specimens of Aleucis pictaria, taken on the 13th and 26th of April, both in fine condition.

The President said that in the course of his perambulations during the month of April, he had been much surprised at the number of specimens of Vanessa Polychloros that were basking in the sunshine; he could not remember any time that he had seen such a number. He observed that the members had without doubt seen articles in the 'Zoologist,' in reference to the tenacity of life in spiders. It was a well-known fact, that spiders were capable of existing a long time without food. As an illustration, he recollected, when he was a very young naturalist, taking a nest of spider's eggs in mistake for those of a Lepidopterous insect, and putting them in a pill-box. On opening the box some days afterwards, he found it full of young spiders and web: it was then put by for a time, and upon opening it by chance he found the spiders still alive. His curiosity being excited, he put the box away carefully for nine months, and on opening it at the end of that time, he found the spiders still alive, but they died a few days after. These little creatures had never tasted food. Many species of spider, in the perfect state, remain torpid during the winter months, and do not move until the warm days of spring call them into life, which will tend to account for their abstinence; but this does not apply to the case above mentioned. After all, however, what is this to the case of a toad living for ages encased in rocks and trees? This would prove a much greater tenacity of life, but unfortunately no such examples have ever come under the notice of a naturalist.

Mr. Dalman, on the part of Mr. Miller, exhibited a box of insects, containing, among others, a pair of Cassida splendidula, taken at West Wickham on May 1.

Mr. Jones exhibited specimens of Lithocolletis alnipaliella, from the leaves of the alder.—*J. T. N.*

## *Proceedings of the Tyneside Naturalists' Field Club.*

*Anniversary Meeting, March* 30, 1853.—The Ven. Archdeacon Thorp, Warden of the University of Durham, President, in the chair.

There was a very full attendance of Members, and the proceedings were commenced by the delivery of the presidential Address of the Ven. Chairman, in which he reviewed the proceedings of the past year. The first field meeting of 1852, he said, had been held at Lumley, on which occasion the members visited the castles of Lumbley and Lambton, and the ancient Collegiate Church of Chester-le-Street—an edifice filled with memorials of the past, and the former owners of these neighbouring feudal piles. The second meeting was held on the 14th of June, at Featherston and Haltwihstle, amid wild moorland scenery, adorned by the blooming heather, and watered by the Tyne, which flowed there, a pure and shining stream. The Ven. President referred to the association of those scenes with the memory of his early friend, the Rev. John Hodgson, the historian; and, after a just and eloquent tribute to his diligence, his faithfulness, and the simplicity of his character, exhorted the younger members to imitate his bright example. The third field meeting had been held on the 16th of July, at Castle Eden; but the excitement attending the general election at that time, had prevented many members of the club from joining the meeting. The fourth meeting had been held at Bamborough,—a locality of peculiar attraction and interest. In the neighbourhood might be mentioned Twizel House, and Spindleston Hills, the latter associated with the romantic history of the Earl of Derwentwater; and, beyond these, was Holy Island, hallowed by the Priory of Lindisfarne and the Farn Islands, where St. Cuthbert's Hermitage and Chapel were to be seen, not uncared for at the present day; while, on the mainland, the old historic Castle of Bamburgh yet stood in stately pride, with the venerable church, whose history ascended to the earliest days of Christianity in Northumberland. The many attractive objects of this locality deserved, he said, repeated visits from the members, more especially they ought to make a pilgrimage to Holy Island, and linger amidst memories which were in truth the history of the English Church in its early days. The meeting at Bamburgh had been marked by the reading of a paper by Mr. Albany Hancock, on the nidification of the stickleback, a peculiarity which had been noticed by Aristotle, but not treated of by subsequent writers. Dr. Thorp said that the well-known legend of the worm of Spindleston offered a corroboration of the view suggested by his predecessor in that chair (Mr. Ingham), in his address last year, that great reptiles, formerly inhabiting the primeval forests, may have lingered in this country down to a comparatively late period, and have given rise to the many popular traditions about dragons. The fifth and last meeting had been held at Otterburn, on the 28th of September, on the hospitable invitation of Mr. Coward. That was a vicinity full of ancient memorials. Besides the Roman camp, at which such interesting discoveries had recently been made, and which had formed the subject of a paper read to the Club by Mr. Kell, there was Elsdon, where the family of Umfreville had once their tower of strength, and, besides many sylvan objects, there were all the martial memories of Otterburn, that still live in tradition, and "look green in song." The worthy Archdeacon then remarked that it was strictly within the objects of this Club, to cultivate a knowledge of local antiquities; its members in their excursions, which were often taken in places remote from the frequented paths of men, had opportunities of collecting local tradition, and of visiting localities which had been the scenes of historical events, or had been marked by buildings of which the material traces were fast disappearing. In the buildings and monuments which it was the province of the archæologist to investigate, the history of the country and its former inhabitants was written, and a rich field of usefulness, as well as rational pleasure, was open to a Club which combined such investigations with the immediate pursuits of the naturalist. As to these, the Ven. President pointed out several plants that were to be found in the neighbourhood of the city of Durham, and the birds whose notes gladdened the inhabitants from April to September. He urged members to avail themselves of the health-giving pleasures which the social meetings of the Club in rural localities afforded, and to make every step in their field-walks a step in the path of wisdom, and an approach towards such knowledge as our finite comprehension could attain of the great Auther of nature, the Infinite and All-wise.

The eloquent and appropriate Address of the Ven. President was received with cordial applause; he however omitted to state therein, that he had himself entertained the members at dinner, on the occasion of their visit to Bamburgh Castle,—a visit, the pleasures of which were greatly enhanced by courteous hospitality.

The President then read a statement of plants and insects, new to the district, which had been met with during the year. Of the latter, Mr. J. T. Bold exhibited some of the rarer species of Hydroporus: namely, H. rufifrons, *Dup.*, taken at Boldon Flats; H. Gyllenhalii, *Schiödte*, from Gosforth; H. tristis, *Payk.*, from Prestwick Car; H. obscurus, *Sturm*, from Gosforth and Prestwick Car; and a small obscure species, apparently unrecorded as British, which was met with in some plenty at Gosforth, in company with H. angustatus. The same gentleman exhibited a few of the wild bees of the district; also, some very interesting Coleoptera, mostly taken in Cumberland, including a fine series of a large, dark variety of Hydroporus elegans (?), from Talkin Tarn. A series of Aphodius Lapponum, and three specimens of A. alpinus, *Scop.*, from Tindal Fell. Single specimens of Ips quadripustulata, Oömorphus concolor and Scymnus nigrinus; the first and last captured near Gosforth. Another rarity was a specimen of the true Blaps mortisaga, *Linn.*, taken in Scotland.

Part 2 vol. ii. of the Club's 'Transactions,' and part 3 (the concluding one) of Messrs. Hardy and Bold's 'Catalogue of the Coleoptera of Northumberland and Durham,' were on the table and distributed to the members.

The meeting terminated by the election of officers for the year, Sir W. C. Trevelyan being unanimously voted President.

## *Proceedings of the Dublin Natural History Society.*

*Friday, April* 8, 1853.—PROFESSOR ALLMAN, M.R.I.A., in the chair.

Several donations were announced, and among them was a very fine engraving, handsomely framed, of the celebrated wood-engraver, Thomas Bewick; presented by Dr. Gordon: who passed some deserved eulogiums on Bewick's skill and truthfulness in his delineations of animal life.

Mr. Williams presented a fine specimen of the wild swan (*Cygnus ferus*). This bird had been in his possession for more than sixteen years, and lately met with a severe accident, which had broken its wing close to the shoulder, thus rendering it nessessary to kill it. Mr. Williams had bought the swan from a party at Abbeville, in France. The bird had then been kept nearly sixteen years by the person he purchased it from, who had captured it, when a mature bird, in a snow-storm. It was therefore difficult to say what age the bird had reached. He would mention a remarkable fact connected with the death of the bird. Being anxious to put an end to its sufferings, he had given strychnine to the bird to the extent of 40 grains, without producing any sensible effect.

A paper by Mr. Andrews, "On the Embryology of the Trout," was then read.

The author said,—"The true value and importance of the natural sciences are the useful and practical results that can be derived from the study. The mere collecting of objects, or the display and arrangement of a museum, may indeed afford pleasure to many, whose time, or powers of observation, cannot command a more extended sphere of scientific inquiry; but a far nobler aim in the study of the natural sciences is the blending with scientific details enlarged views of practical utility, and to make Natural History conducive, not merely to amusement, but to the substantial improvement of man. Such are the views of this Society, and to such are its pursuits and exertions directed.

"Another important feature in the proceedings are the opinions so freely given by the members: and it is by discussion, which is the life and soul of a Society like ours, that we arrive at the truth on subjects which often otherwise would appear perplexed and obscure.

"So far back as 1847, I had the pleasure, at a meeting of the Society, of submitting to the members a statement relative to the fisheries of Ireland, and alluded at the time to the many extensive lakes and rivers of this country, whose waters might be made valuable by the introduction of the impregnated ova of some of the most esteemed kinds of fish from the lakes and rivers of the Continent; such as the Perca lucio-perca, P. Zingel, Salmo hucho, &c., which the Danube, Iser, and Sáve abundantly afford. In France, the inland fisheries are so cherished, that an acre of water is rendered as valuable as an acre of ground; and the successful experiments in that country attending the propagation of the ova, are now rendering the object one of mercantile value.

"One of the most delicious and esteemed fish for the table, the Osphromenus of Commerson, is remarkable for its size and excellent flavour. It is mentioned as originally from China, and known as the Gourami; thence introduced by the Dutch to Batavia, who kept and fed it in large earthen vessels, where it deposited its spawn. It was also kept in tanks in the Isle of France, whence it escaped into the rivers of the island, and now abounds there. Introduced also to Cayenne, and to the West India

Islands, it has abundantly multiplied, proving, where climate and temperature are adapted, how readily the propagation can be extended."

The author here read a letter from Mr. Daniel Smith to Mr. S. Gurney, jun., in reference to the impregnated ova of salmon and trout sent from England to Australia. This letter is given in our number for June, 1852, (Zool. 3504). He then continued:—

"Mr. Gurney also wrote to me from Carshalton on the 21st of January last, this pleasing communication:—'I expect to begin spawning my fish tomorrow. I have just heard that some spawn I sent to New Zealand about two years ago, was hatched in due course, and that the fish from my river (the Wandle), are now flourishing in the Antipodes.' This is the course to make Natural History truly useful; and is it not of the highest importance to have it so directed, that a knowledge of the habits and spawning states of our most esteemed fish can render their distribution to unproductive waters, where climate and temperature may prove congenial. The object of the present paper is not to enter fully into the physiological details of fœtation, or the development of the embryo, to the growth or development of extrication from the ovum, but merely the record of observations made during a recent visit to Mr. Gurney, at Carshalton."

After a brief description of Mr. Gurney's grounds, the author proceeds:—

"I was fortunate in visiting Carshalton about the middle of last month, and had the opportunity of learning from Mr. Gurney, and of seeing, his successful plans. At that time the spawning-season was over, and the parent fish had retired from the deposit-beds to deep water. After the artificial impregnation of the ova, they are placed in beds of gravel, in boxes secured with wire gratings, and through which a stream of water plays, of sufficient depth to allow the light and temperature necessary for the due development of the embryo fish. In such state the ova are prepared for transportation to our remotest colonies. Mr. Gurney had at the time some ova kept in the house in a tin vessel, which were spawned at Christmas, and sent to him from Derbyshire. Several had extricated themselves from the eggs, and were actively moving through the water, with the large vitelline sac attached. The time of extrication much varies, according to season or temperature, generally from six to seven weeks. These, under the microscope, afford most beautiful examples of the circulating system, and I was fortunate in witnessing the extrication of one from the ovum. When the ovum is fully matured, the external tunic or shell becomes exceedingly thin and transparent, is easily ruptured, and the tail of the embryo fish unbending, first forces the passage out. At this time the eyes are large and prominent, and all the fins are rudimentary and undeveloped. The little creature, however, rapidly grows, the irides assume a brilliant tinge, the pectoral fins rapidly play, and traces of the formation of the dorsal, caudal and anal fins are seen. It is then that its extreme beauty is so conspicuous under the microscope. The vitellicle is attached to the forepart of the abdomen, of an oblong shape, highly vascular, and the vitelline vessels and circulating cells are beautifully shown; the blood flows through the blood-vessels ramified along the sides of the back, rushes through the large vessel of the vitellicle, and communicates with the heart, which is situated under the throat, immediately anterior to the pectoral fins, the richly coloured blood in the pulsating tube beating from 60 to 70 in a minute. Along with the blood, a transparent matter is seen in constant circulation. This state was admirably shown to me by Mr. Gurney, who kindly presented me with four specimens, and these lived for three weeks, until killed within these few days, probably by some impurity of the water. At the time of their death they had grown much, were exceedingly active, swimming with much velocity; their backs and sides had become darker and spotted; all the fins were well developed, with the exception of the adipose or posterior dorsal fin; the respiratory organs were beautifully shown, but the vitelline sac had not diminished in size, nor was the globular yolk in any way absorbed. The little creatures would rise with great rapidity to the surface, particularly when fresh water was given, dart about, then suddenly sink to the bottom, lying on their sides. I regret that I lost further opportunity of witnessing their progressive development.

"In the salmon, trout and all oviparous fish, the ova are expelled from the female, and undergo development independently of the mother; the nourishment necessary for them being contained within themselves. Thus, when depositing spawn, the parent fish seek the shoaler grounds, as the influence of light and higher temperature are absolutely necessary to the maturation and proper development of the ova, and according to their peculiar habits the ova are deposited in sandy or muddy, gravelly or rocky ground. In the ovo-viviparous fish, of which the picked dog-fish (*Acanthias vulgaris*) is an example, the young are produced before expulsion, remaining for a period within the parent. In the young state of the Acanthias, the vitellicle is extremely large, and hangs as a pedunculate sac from the anterior abdominal portion of the body. The specimens exhibited were taken in the month of July, at a long distance from the land, off the coast of Kerry, in 86 fathoms water, on the long lines. I took numbers out of the old fish, expulsion not having taken place.

"These few remarks, and the specimens submitted, will, I am sure, in some degree satisfy the meeting of the great value and interest that the study of the habits of fishes presents, and how much we have yet to arrive at in the knowledge of the generation of those animals."

Mr. Andrews concluded by referring to Mr. Warington's marine vivaria, and mentioned that he had himself found the Characeæ to be most useful plants in keeping the water pure. He had had Chara delicatula growing and fructifying beautifully in the vase, with the water unchanged for months, merely adding fresh as evaporation took place: and he had kept Amphipeplea glutinosa and several delicate Mollusca in a perfectly health state.

Specimens of the embryo trout were exhibited preserved in glycerine.

Mr. Ffennell, Inspecting Commissioner of Fisheries, made some observations on the high importance of Mr. Andrews's statements in relation to the fisheries of this country. He referred to the liberal encouragement given by the French Government to the artificial propagation of fish in France; and mentioned that Messrs. Ashworth, of Stockport had purchased property near Galway, and were successfully carrying on the breeding of salmon in Lough Corrib.

The Chairman also made some observations on the great interest of Mr. Andrews's paper, as containing practical views on an important subject. He then gave a rapid sketch of the phenomena of embryonic development, illustrating, by means of diagrams on the black board, the successive stages, from the first traces of organization in the egg to the final escape of the little fish into the surrounding water.

Mr. Kinahan read the commencement of his paper "On the Autumnal Song of Birds."

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